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2016 Wood Processor Report, Including Import and Export Information

Maine Forest Service

Forest Policy and Management Division

Department of Agriculture, Conservation and Forestry

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2016 Wood Processor Report

Including Import and Export Information

**Compiled from 2016 Wood Processor Reports
pursuant to 12 M.R.S. § 8884**

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Department of Agriculture, Conservation and Forestry

Maine Forest Service

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What is the purpose of the Wood Processor Report?

Each year, the Maine Forest Service collects information from Maine primary wood processors regarding the volume of wood processed in Maine. Information is also collected for volumes imported into Maine or exported from Maine.

This report summarizes, for 2016, the volume of wood harvested in Maine, processed by Maine mills, and imported into or exported from Maine.

Wood flow data is summarized for sawlogs, pulpwood, biomass chips, other miscellaneous products, and imports and exports.

How was this information collected?

In 2016, the Maine Forest Service received wood processor reports from 126 primary processing mills (sawmills, pulp and paper mills), 45 portable sawmills, 77 firewood dealers, 114 loggers and brokers who may have exported wood, 23 concentration yards, and 8 mills that burn some form of wood for energy. Volume information contained in these individual reports is confidential and by law shall not be made public, except that summary reports may be published using aggregated data which does not reveal the activities of an individual person or firm (12 M.R.S. §8884, sub-§3, "Forest Landowner and Wood Processor Reporting Requirements").

Interpreting Harvest, Export, Import, and Processed by the Maine Forest Products Industry

Maine wood processed

wood that is harvested in Maine and used by a Maine primary processing facility.

Exported from Maine without processing

wood that is harvested in Maine and exported out of state without processing by a Maine mill.

Imported from out of state

wood that is imported from out of state (not harvested in Maine) and processed by a Maine mill.

Total processed by Maine Forest Products Industry

total volume of wood processed in Maine, regardless of origin.

Definitions and Notes

1. Biomass Chips:

produced in the woods by chipping any or all of the following: tree limbs and tops, cull trees, and smaller trees not suitable for higher value products. Usually used as energy fuel, biomass chips may also be used for sludge composting, playground padding, and mulch.

2. Bole/Stem Pulp Chips:

produced in the woods by chipping the lower portion of the tree. These chips are not free of bark, but are suitable for use in pulp mills.

3. Cords (cfs):

a stack of fuel wood, pulpwood, or other material that measures 4 x 4 x 8 feet, or 128 cubic feet.

4. Construction and Demolition Waste (C and D Waste):

ground up wooden debris left over from construction and demolition that is burned by wood to energy facilities.

5. Firewood: roundwood that is burned for home heating.

6. Hog Fuel:

any woody residue produced from mills, such as sawdust, bark or shavings, and used as energy fuel.

7. Pellets:

wood fuel generally made from dried wood fiber compressed into uniform diameter for burning.

8. Pulpwood:

roundwood that is used for the production of wood pulp. Generally sold as tree length, 16', 8' or 4' lengths.

9. Sawlogs:

a log that meets minimum standards of diameter, length, and defect, intended for sawing into boards or lumber. Includes sawlogs, studwood, pallet logs, boltwood, and veneer logs.

10. Sawmill residues:

clean, pulp-quality chips made from debarked slabs and edgings at sawmills. Used by pulp and paper mills to produce wood pulp.

11. Thousand Board Feet (MBF):

One thousand board feet. One board foot is the amount of wood contained in an unfinished board 1" thick, 12" long, and 12" wide.

Report Highlights



Maine's forest products industry consumed 13.1 million green ton equivalents in 2016, down from 15.2 million green ton equivalents in 2015. Eighty percent of the processing total (10.5 million green ton equivalents) was harvested in Maine, while 20% (2.6 million green ton equivalents) was imported.



Maine landowners harvested 12.8 million green ton equivalents of wood in 2016, down from 2015 (14.6 million green ton equivalents). Eighteen percent (2.3 million green ton equivalents) of the 2016 harvest was exported, down from 2015 (2.6 million green ton equivalents).



Maine's pulp and paper producers processed 7.2 million green tons of pulpwood, down 1.1 million tons (13%) from 2015 consumption. Seventy-seven percent of the pulpwood originated from Maine's forests; 23% was imported.



Biomass harvesting volume was 2.2 million tons in 2016, down from 2015 (3.0 million tons). Biomass energy facilities consumed 2.0 million tons in 2016, down 30% from 2015 (2.9 million tons). Eighty-five percent originated from Maine's forests; 15% was imported.



Maine's sawlog processing in 2016 was 0.86 billion board feet, same as 2015 (0.85 billion board feet).



Maine's forest products industry imported 2.6 million green tons during 2016, compared to 3.2 million tons in 2015. 2.3 million green tons were exported in 2016, down from 2.6 million tons in 2015.

SAWLOGS

2016 Wood flow in Maine as reported to the Maine Forest Service (in MBF)

County	Spruce and Fir	White and Red Pine	Hemlock	Cedar	Other Softwood	Total Softwood	Beech	White Birch	Yellow Birch	Sugar Maple	Red Maple	Oak	Ash	Aspen	Other Hardwood	Total Hardwood	Total Sawlogs
ANDROSCOGGIN	1,683	8,891	418	3,551	0	14,543	115	165	236	269	260	1,015	345	27	28	2,460	17,003
AROOSTOOK	145,123	997	7,533	1,227	54	154,934	1,745	5,547	5,634	12,998	6,787	8	298	60,735	413	94,165	249,099
CUMBERLAND	332	15,792	3,058	0	0	19,182	178	134	182	118	350	824	206	1	0	1,993	21,175
FRANKLIN	10,682	10,123	295	276	20	21,396	459	2,008	690	1,892	576	722	575	130	921	7,973	29,369
HANCOCK	8,912	6,376	387	51	0	15,726	48	608	202	701	183	472	288	0	928	3,430	19,156
KENNEBEC	1,249	15,075	2,287	20	25	18,656	266	903	155	477	513	848	220	76	50	3,508	22,164
KNOX	47	1,236	290	0	0	1,573	2	21	1	0	0	59	3	3	0	89	1,662
LINCOLN	934	6,633	743	0	0	8,310	14	37	4	65	9	163	4	1	0	297	8,607
OXFORD	26,790	33,694	1,087	0	0	61,571	756	1,829	1,500	2,465	1,070	2,981	906	38	440	11,985	73,556
PENOBSCOT	38,480	16,169	10,343	1,486	1	66,479	64	3,011	1,574	2,458	524	523	1,064	5,560	701	15,479	81,958
PISCATAQUIS	30,607	5,416	1,133	87	29	37,272	691	1,513	3,059	9,420	1,397	1,034	808	2	506	18,430	55,702
SAGadahoc	18	1,882	46	1	0	1,947	6	2	0	5	9	167	9	2	0	200	2,147
SOMERSET	28,611	12,226	296	467	59	41,659	1,133	3,055	1,741	2,914	962	1,569	1,117	26	644	13,161	54,820
WALDO	1,807	10,510	867	135	0	13,319	28	332	35	49	114	1,421	95	36	0	2,110	15,429
WASHINGTON	22,593	3,202	259	62	2	26,118	43	219	214	466	61	47	228	1,868	759	3,905	30,023
YORK	52	19,300	489	1	0	19,842	109	55	21	20	322	208	17	1	0	753	20,595
Maine wood processed:	317,920	167,522	29,531	7,364	190	522,527	5,657	19,439	15,248	34,317	13,137	12,061	6,183	68,506	5,390	179,938	702,465
Exported from Maine without processing:	133,707	19,708	727	9,667	0	163,809	33	1,294	5,972	8,484	2,443	8,567	3,871	24	51,719	82,407	246,216
Total harvested from Maine forests:	451,627	187,230	30,258	17,031	190	686,336	5,690	20,733	21,220	42,801	15,580	20,628	10,054	68,530	57,109	262,345	948,681
Imported from out of state:	27,862	63,399	842	833	0	92,936	256	4,015	980	2,350	2,250	386	206	48,038	1,496	59,977	152,913
Total processed by Maine Forest Products Industry:	345,782	230,921	30,373	8,197	190	615,463	5,913	23,454	16,228	36,667	15,387	12,447	6,389	116,544	6,886	239,915	855,378

- Notes:**
1. Sawlogs include logs, veneer, boltwood, studwood, palletwood, etc. Green ton converted to MBF @ 5 green tons = 1 MBF.
 2. Other Softwood includes larch, pitch pine, and others.

PULPWOOD

2016 Wood flow in Maine as reported to the Maine Forest Service (in Green Tons), including both solid wood and bole/stem pulp chips (Totals do not add up due to rounding)

County	Spruce and Fir	White and Red Pine	Hemlock	Cedar	Other Softwood	Total Softwood	Aspen	Other Hardwood	Total Hardwood	Mixed Wood	Total Pulpwood
ANDROSCOGGIN	284	8,306	9,413	0	6,310	24,313	2,695	64,125	66,820	0	91,133
AROOSTOOK	9,286	31	3,834	0	14,500	27,651	1,505	881,822	883,327	0	910,978
CUMBERLAND	428	39,666	14,294	0	5,277	59,665	2,636	57,297	59,933	0	119,598
FRANKLIN	69,108	9,310	17,585	0	15,409	111,412	24,985	386,848	411,833	0	523,245
HANCOCK	13,365	4,834	7,036	0	28,838	54,073	7,158	111,043	118,201	0	172,274
KENNEBEC	3,664	23,427	15,841	0	17,761	60,693	7,693	118,195	125,888	0	186,581
KNOX	721	2,457	663	0	2,854	6,695	1,640	19,853	21,493	0	28,188
LINCOLN	860	12,909	3,382	0	6,500	23,651	1,148	26,942	28,090	0	51,741
OXFORD	23,215	111,727	47,446	0	14,052	196,440	22,177	425,271	447,448	0	643,888
PENOBSCOT	29,197	3,199	51,254	0	28,650	112,300	23,219	579,450	602,669	0	714,969
PISCATAQUIS	99,601	3,950	12,416	0	19,657	135,624	14,155	360,227	374,382	0	510,006
SAGadahoc	60	2,705	981	0	2,940	6,686	379	7,517	7,896	0	14,582
SOMERSET	144,910	33,494	14,166	0	11,373	203,943	40,611	628,168	668,779	0	872,722
WALDO	11,574	30,602	4,430	0	5,915	52,521	6,873	91,076	97,949	0	150,470
WASHINGTON	14,437	439	7,916	0	37,270	60,062	2,819	375,274	378,093	0	438,155
YORK	37	15,175	13,298	0	827	29,337	1,828	79,531	81,359	0	110,696
Maine wood processed:											
	420,747	302,231	223,955	0	218,133	1,165,066	161,521	4,212,639	4,374,160	0	5,539,226
Exported from Maine without processing:											
	451,546	137	7,953	0	15,510	475,146	3,877	182,134	186,011	0	661,157
Total harvested from Maine forests:											
	872,293	302,368	231,908	0	233,643	1,640,212	165,398	4,394,773	4,560,171	0	6,200,383
Imported from out of state:											
	135,357	62,189	47,053	0	19,103	263,702	71,798	1,320,463	1,392,261	0	1,655,963
Total processed by Maine Forest Products Industry:											
	556,104	364,420	271,008	0	237,236	1,428,768	233,319	5,533,102	5,766,421	0	7,195,189

SAWMILL RESIDUE

Green Tons

6,477
5,255
5,551
21,683
8,633
1,204
37
0
18,726
9,969
41,201
0
19,731
322
0
10,044
148,833
16,664
165,497
115,069
263,902

Sawmill residues are clean, pulp-quality wood chips made from slabs and edgings at sawmills. The volume is reported here as an additional input to the pulp and paper mills and pellet mills. Sawmill residues are a by-product of the sawing process, and are not included as additional harvest volumes from Maine's forests.

NOTE: Sawmill residue volumes from pellet mills in past years have been reported under firewood. They are now reported under sawmill residue.

Pulpwood Notes:

1. Other Softwood is comprised of bole chips of which specific species information was not collected.
2. Aspen volumes are based upon pure loads.
3. Other Hardwood is comprised of all hardwood species except aspen sold in pure loads.

Wood Imports and Exports

2016 Wood Flow in Maine as reported to the Maine Forest Service (in Green Tons)

County	BIOMASS CHIPS	Further utilization of wood already tallied.	C AND D WASTE	FIREWOOD / PELLET* CORDS
		HOG FUEL		
Androscoggin	79,292	20,750	6,696	946
Aroostook	373,521	188,366	0	6,322
Cumberland	170,647	11,059	6,417	2,097
Franklin	197,587	80,943	0	7,333
Hancock	27,584	16,157	0	723
Kennebec	99,515	2,550	371	2,703
Knox	21,253	49	0	538
Lincoln	32,052	84	0	66
Oxford	169,766	125,441	0	2,648
Penobscot	171,946	30,770	32	4,823
Piscataquis	35,598	46,032	0	3,560
Sagadahoc	3,062	186	1,866	683
Somerset	146,383	34,970	0	13,493
Statewide*	0	0	0	9,851
Waldo	40,858	13,460	0	1,684
Washington	32,344	24,723	0	540
York	138,033	10,134	493	725
Maine wood processed:				58,735
Exported from Maine without processing:				2,525
Total harvested from Maine Forests:				61,260
Imported from out of state:				7
Total processed by Maine Forest Products Industry:				58,742

Import Origins

States:

Connecticut
Massachusetts
New Hampshire
New York
Rhode Island
Vermont

Provinces:

New Brunswick
Quebec

Export Destinations

States:

Connecticut
Indiana
Massachusetts
Michigan
New Hampshire
New Jersey
New York

Pennsylvania
Rhode Island
Vermont

Provinces:

New Brunswick
Quebec

Countries:

China
Thailand

* This is the ninth Wood Processor Report to separately report firewood as a new product. Report forms were sent to known firewood dealers. In the past some firewood was uniquely identified and reported to MFS as an export, and MFS grouped these minor volumes into the pulpwood product. This by no means a complete accounting of the volume of processed firewood merchandized, sold, or distributed within Maine, or as an export or import. The only previous estimation of annual firewood consumption is a survey conducted by the State Planning Office in the early 1990's. That survey estimated an annual processing, sale, distribution and consumption of 400,000 cords. MFS will continue to improve its survey methods in order to obtain a consistent and reliable estimate of annual firewood processing.

In addition, this is the ninthth year we have received reports from Maine's pellet mills. We have included reported volumes for pellet production under this section also.

NOTE: Sawmill residue volumes from pellet mills in past years have been reported under firewood. They are now reported under sawmill residue.

*Volumes reported with no indication of originating county were identified as Statewide volume.

SUMMARY**2016 Wood flow in Maine as reported to the Maine Forest Service**

Product	Harvest, Export, Import, Instate Processing	Total Volume in 2016	Total Volume in Green Tons
Sawlogs (in MBF) 1 MBF = 1,000 board feet <u>Note on conversions:</u> see conversion table at the end of report	a. Maine wood processed	702,465	3,079,603
	b. Exported from Maine without processing	246,216	1,120,766
	c. Total harvested from Maine forests (a+b=c)	948,681	4,200,369
	d. Imported from out of state	152,913	661,490
	f. Total processed by Maine Forest Products Industry (a+d=e)	855,378	3,741,093
Pulpwood (in green tons)	a. Maine wood processed	5,539,226	5,539,226
	b. Exported from Maine without processing	661,157	661,157
	c. Total harvested from Maine forests (a+b=c)	6,200,383	6,200,383
	d. Imported from out of state	1,655,963	1,655,963
	f. Total processed by Maine Forest Products Industry (a+d=e)	7,195,189	7,195,189
Biomass Chips (in green tons)	a. Maine wood processed	1,739,441	1,739,441
	b. Exported from Maine without processing	507,640	507,640
	c. Total harvested from Maine forests (a+b=c)	2,247,081	2,247,081
	d. Imported from out of state	298,713	298,713
	f. Total processed by Maine Forest Products Industry (a+d=e)	2,038,154	2,038,154
Firewood / Pellets (in cords) <u>Note on conversion:</u> 1 cord = 2.5 green tons	a. Maine wood processed	58,735	146,838
	b. Exported from Maine without processing	2,525	6,313
	c. Total harvested from Maine forests (a+b=c)	61,260	153,150
	d. Imported from out of state	7	18
	f. Total processed by Maine Forest Products Industry (a+d=e)	58,742	146,855
Totals (in green tons)	a. Maine wood processed		10,505,108
	b. Exported from Maine without processing		2,295,875
	c. Total harvested from Maine forests (a+b=c)		12,800,983
	d. Imported from out of state		2,616,183
	f. Total processed by Maine Forest Products Industry (a+d=e)		13,121,291

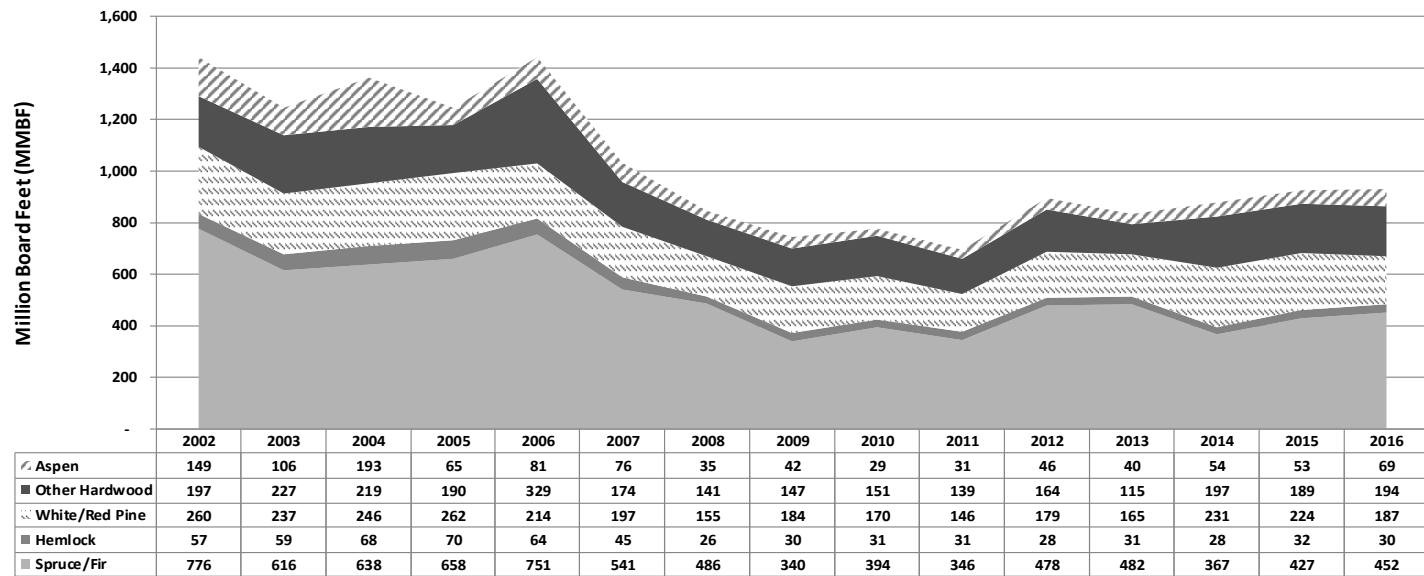
Wood Harvesting Trends (2002-2016)

The Maine Forest Service has been collecting data on volume of wood harvested since the late 1940's. The following three charts illustrate wood harvesting trends over the past 15 years.

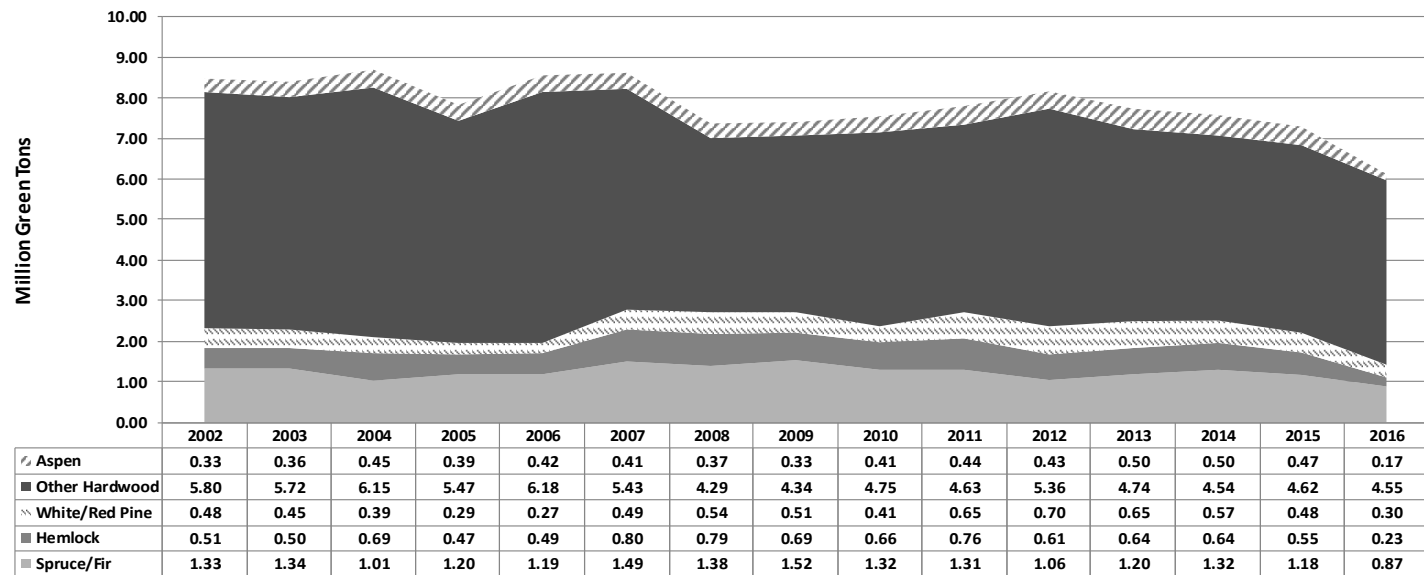
The two graphs to the right show the harvest volumes for selected species for sawlogs and pulpwood. These volumes include exported volumes.



Sawlog harvest levels of selected species in Maine (2002 - 2016)

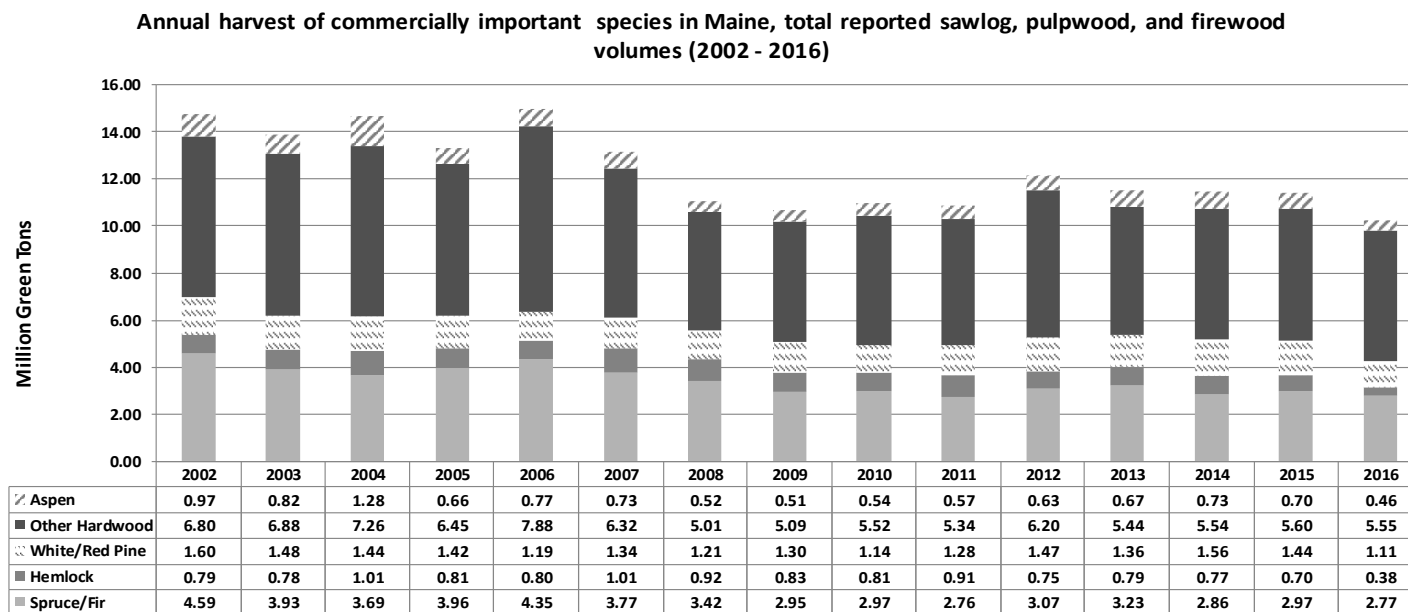


Pulpwood harvest levels of selected species in Maine (2002 - 2016)



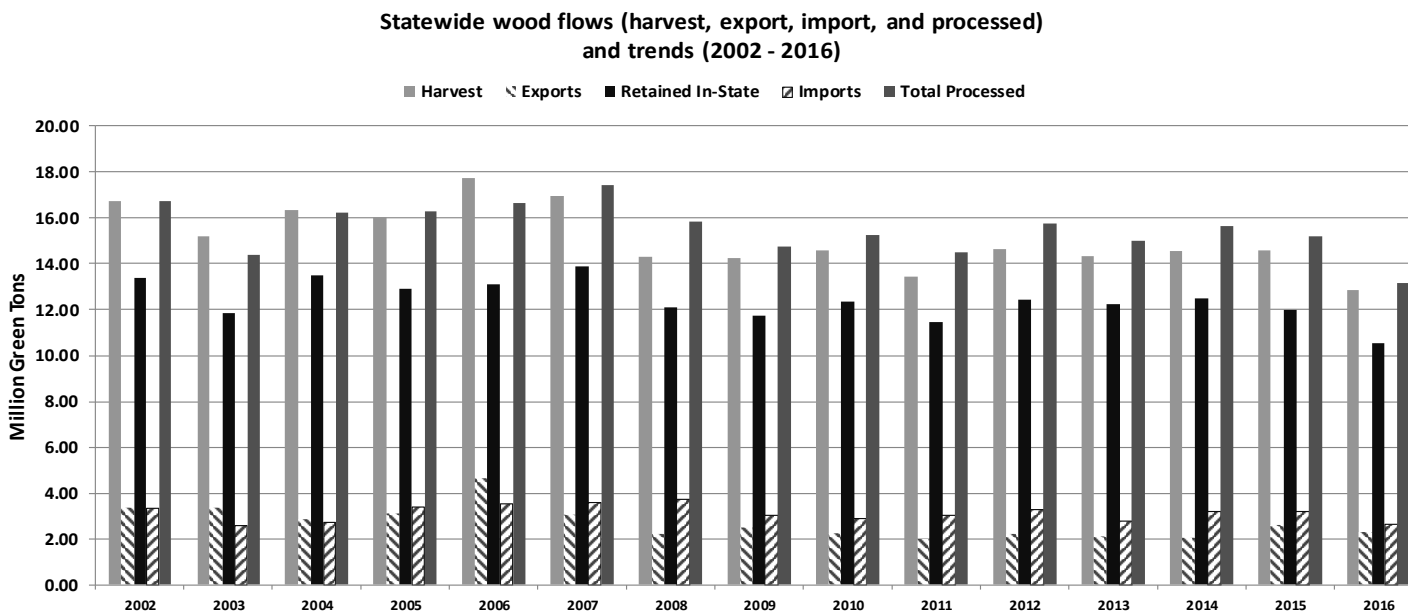
Wood Harvesting Trends (2002-2016)

The graph to the right shows the volumes for commercially important species.



Statewide Wood Flows (2002-2016)

The graph to the right shows the volumes of forest products being exported from Maine, imported into Maine, and processed within Maine.



Conversion Table MBF/Weight Equivalents for various Maine Commercial Tree Species

These conversions are used by the Maine Forest Service.

Users of this report may wish to confirm the conversion rate(s) used by individual mills and/or contractors who purchase wood.

<u>Species</u>	<u>MBF</u>	<u>Tons</u>
Spruce Fir	1	4.2
White Pine	1	4.3
Red Pine	1	4.3
Hemlock	1	4.8
Cedar	1	3.4
Tamarack (Larch)	1	4.8
Beech	1	4.5
White Birch	1	4.5
Yellow Birch	1	5.4
Sugar Maple	1	5.4
Red Maple	1	4.5
White Oak	1	5.4
Red Oak	1	5.4
Ash	1	4.5
Aspen/Poplar	1	4.3
Softwood	1	4.6
Hardwood	1	5.4
Mixed Wood	1	4.6

For purposes of comparing volumes, a rough conversion of 1 MBF = 2 cords is commonly used.

These conversions factors are handy for making estimates and for forest inventory purposes, but are advisory only. The weight of a particular volume of wood varies greatly by species, time of year and other factors.

It is illegal in Maine to convert from one system of measurement to another for the basis of payment (e.g. convert a mill payment for pulpwood in dollars per ton to a landowner payment in dollars per cord).



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